

AMENDMENTS TO THE CLAIMS

Please amend the claims without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents, as follows.

1-47. (Canceled)

48. (Currently Amended) A method for determining the volume of a dispensed liquid sample, wherein the sample liquid comprises a fixed concentration of indicator ions comprising the steps of:

- providing a diluent in a container, the diluent comprising polydentate chromogenic ligands of one type;
- dispensing a volume of the sample liquid into the diluent, thereby forming complexes of the polydentate chromogenic ligands with the indicator ions, which complexes are chromophoric indicators for ~~and thereby~~ staining the resulting mixture;
- measuring the optical absorption of the stained mixture in the container; and
- determining the volume of the dispensed liquid sample by correlating the measured optical absorption of the stained mixture with the optical absorption of a test sample that has an exactly defined concentration of the same chromophoric indicator, ~~which and wherein the chromophoric indicator is a the colored complex formed between the polydentate chromogenic ligand and the indicator ions~~ that has a three-dimensional coordination geometry, which greatly hinders adsorption of this type of molecule to apolar surfaces.

49. (Currently Amended) A method for determining a residual volume of a liquid in a sample holder comprising the steps of:

- providing a liquid in a sample holder comprising a fixed concentration of indicator ions;
- removing a volume of the liquid from the sample holder;
- adding a diluent comprising polydentate chromogenic ligands of one type to the liquid remaining in the sample holder to form the complexes of the polydentate chromogenic ligands with the indicator ions, which complexes are chromophoric indicators for ~~and thereby~~ staining the resulting mixture;
- measuring the optical absorption of the stained mixture in the sample holder; and

- determining the residual volume of the liquid by correlating the measured optical absorption of the stained mixture in the sample holder with the optical absorption of a test sample that has an exactly defined concentration of the same chromophoric indicator, ~~which and wherein the chromophoric indicator is a the colored complex formed between the polydentate chromogenic ligand and the indicator ions that has a three-dimensional coordination geometry, which greatly hinders adsorption of this type of molecule to apolar surfaces.~~

50. (Currently Amended) A method for determining the volume of a dispensed liquid sample, comprising the steps of:

- providing a diluent in a container;
- dispensing a volume of a sample liquid comprising a chromophoric indicator that stains the sample liquid to form a mixture in the container;
- measuring the optical absorption of the stained mixture in the container; and
- determining the volume of the dispensed liquid sample by correlating the measured optical absorption of the stained mixture with the optical absorption of a test sample that has an exactly defined concentration of the same chromophoric indicator, wherein the chromophoric indicator to stain the sample liquid is a colored complex that is formed by complexing indicator ions with specific polydentate chromogenic ligands with a three-dimensional coordination geometry which greatly hinders adsorption of this type of molecule to apolar surfaces.

51. (Currently Amended) A method for determining a residual volume of a liquid in a sample holder comprising the steps of:

- providing a liquid in a sample holder comprising a chromophoric indicator;
- removing a part of the liquid in the sample holder;
- adding a diluent to the residual volume of the liquid in the sample holder;
- measuring the optical absorption of the diluted residual volume of the liquid; and
- determining the residual volume of the liquid in the sample holder by correlating the measured optical absorption of the mixture with the optical absorption of a test sample that has an exactly defined concentration of the same chromophoric indicator, wherein the chromophoric indicator to stain the liquid is formed by complexing indicator ions with specific polydentate chromogenic ligands with a three-

dimensional coordination geometry, which greatly hinders adsorption of this type of molecule to apolar surfaces.

52. (Previously Presented) The method according to Claim 48 or 49, wherein, prior to dispensing the liquid sample, a compensating volume is provided in the container as part of the diluent.

53. (Previously Presented) The method of claim 48 wherein the solution from which liquid is dispensed further comprises complexes composed of one type of auxiliary ligands and indicator ions for improving the solubility of the indicator ions in the solution.

54. (Previously Presented) The method of claim 49 wherein the liquid in the sample holder further comprises complexes composed of one type of auxiliary ligands and indicator ions for improving the solubility of the indicator ions in the liquid.

55. (Previously Presented) The method according to Claim 48 or 49, wherein the polydentate chromogenic ligand is added to the diluent in excess.

56. (Previously Presented) The method according to claim 48 or 50, wherein after dispensing the liquid sample into the container, a supplementary volume is added to this container as part of the diluent.

57. (Previously Presented) The method according to Claim 48, 49, 50, or 51, wherein the indicator ions for complexing with the polydentate chromogenic ligands comprise metal ions.

58. (Previously Presented) The method according to Claim 57, wherein the metal ions are Fe^{++} , Fe^{+++} , mixtures of Fe^{++} and Fe^{+++} , or Cu^{++} .

59. (Previously Presented) The method according to Claim 48, 49, 50, or 51, wherein indicator ions for complexing with the polydentate chromogenic ligands are anions.

60. (Previously Presented) The method according to Claim 59, wherein the anions are F^- , Cl^- , or H_2PO_4^- .

61. (Previously Presented) The method according to Claim 57, wherein metal ions which cannot be quantitatively complexed with the polydentate chromogenic ligands are reduced or oxidized to indicator ions prior to complexing with the polydentate chromogenic ligands.

62. (Previously Presented) The method according to Claim 61, wherein the metal ions are reduced with hydroxyl amine hydrochloride, a tartrate salt, or ascorbic acid or the metal ions are oxidized with hexacyanoferrate or elementary bromine.

63. (Previously Presented) The method of claim 48, 49, 50, or 51, wherein the polydentate chromogenic ligand is FerroZine[®], bathophenanthroline-disulfonic acid disodium, bathocuproine-disulfonic acid disodium or Chromazurol S.
64. (Previously Presented) The method according to claim 53 or 54, wherein the auxiliary ligands are β -diketones.
65. (Previously Presented) The method of claim 64, wherein the β -diketones are acetyl acetate or pentane-2,4-dione-1,5-diol.
66. (Previously Presented) The method of claim 59, wherein the chromogenic ligands are anthraquinone functionalized systems covalently bonded at the β position.
67. (Previously Presented) The method of claim 66, wherein the anthraquinone functionalized system covalently bonded at the β position is calix[4]pyrrole-anthraquinone.
68. (Cancelled)
69. (Previously Presented) The method according to Claim 63, wherein the chromophoric indicator comprises substituted ionic groups that further amplify the hydrophilic properties of the chromophoric indicator.
70. (Previously Presented) The method according to Claim 48 or 49, wherein metal ions, which cannot be quantitatively complexed with the polydentate chromogenic ligands, are complexed with auxiliary ligands thereby improving their solubility in a liquid, a sample of the liquid is dispensed into the diluent, wherein the diluent is an existing reaction solution that comprises polydentate chromogenic ligands and a reducing or oxidizing agent, wherein a reducing or oxidizing agent is reducing or oxidizing the metal ions to indicator ions which are then complexed with the polydentate chromogenic ligands under color development.
71. (Previously Presented) The method according to Claim 53 or 54, in which the metal ions that have been complexed with auxiliary ligands are mixed with the diluent containing polydentate chromogenic ligands, wherein the indicator ions are then complexed with the polydentate chromogenic ligands under color development while suppressing the auxiliary ligands.